

Application No.: 10/532,827
Attorney Docket No.: 052478
Response under 37 CFR §1.111

REMARKS

Claims 1-8 are pending in the present application.

Claim Rejections – 35 U.S.C. § 103

Claims 1 and 3-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over **Hase** (WO 01/32418 with U.S. Patent 7,101,455 used as a translation) in view of **Minami** (U.S. Patent 4,805,690) and as evidenced by the American Heritage Dictionary definition of “room temperature”; and claims 1-8 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Hase** in view of **Akashi** (WO 01/36122 with U.S. Patent 6,615,633 used as a translation) or **Yamagishi** (JP 03266626) and as evidenced by the American Heritage Dictionary definition of “room temperature.”

Favorable reconsideration is requested.

Applicants first note that in the rejection based on Hase in view of Akashi or Yamagishi, the Office Action also cites Minami. (Office Action, page 6.) Clarification of the rejection is requested.

Applicants respectfully submit that Hase in view of either Minami, Akashi or Yamagishi do not teach or suggest:

controlling the temperature in a width direction of the laminate in a cooling process after the lamination so that the temperature of the ends of the laminate is the same as or higher than that of the center portion,

wherein the temperature is controlled at least within the range of from 180°C to (lamination temperature - 100°C)

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as recited in claim 1, and that this feature would not have been obvious based on Hase in view of Minami, Akashi or Yamagishi since it would not have been obvious to combine Hase with Minami, Akashi or Yamagishi.

The Office Action acknowledges that Hase does not disclose controlling the temperature in a width direction of the laminate in a cooling process after the lamination. (Office Action, pages 3 and 5.) The Office Action cites Minami, Akashi and Yamagishi for disclosing this feature. However, none of Minami, Akashi or Yamagishi disclose thermal lamination.

The laminating materials used in the present invention are a copper foil and a heat-resistant film having thermally fusibility. The heat-resistant film may include a core layer having non thermal fusibility such as a non-thermoplastic polyimide film. And the present inventors found that when these materials are continuously laminated together, the “end waviness” phenomenon occurs. As defined in claim 1, in a cooling process of the present invention, the temperature is controlled at least within the range of from 180 to (lamination temperature - 100°C). This is because the laminate is influenced by take-up tension mostly in this range of the temperature due to thermally fusibility. (See specification, page 14, line 15 to page 15, line 5.)

The Office Action takes the position that Minami discloses a lamination temperature of 260°C and cooling the laminate to room temperature, and that this corresponds with the controlling the temperature at least within the range of from 180°C to (lamination temperature - 100°C). (Office Action, pages 4 and 6.) However, Minami does not disclose the lamination temperature of 260°C, and Minami does not disclose thermal lamination. As shown in the description and the drawings, the lamination of Minami is performed while cooling the

lamination materials. For example, in Minami, a pressure roller 1 and a cooling roller 2 engage with each other at a pressure applying part or nip 3. (Col. 2, lines 57-59.) Furthermore, the laminating method disclosed in Minami corresponds to the process of producing the starting material of the present invention such as the heat-resistant film having thermal fusibility comprising more than one layer. The production of the starting material without thermally laminating with a copper foil does not require controlling the temperature as recited in claim 1.

Akashi relates to a metallic rolling, while the present invention does not relate to a metal foil itself. Akashi does not relate to the laminate but to the single layer which is the starting material of the present invention. Akashi does not disclose thermal fusibility. The production of the starting material, without thermally laminating with the heat-resistant film having thermal fusibility, does not require controlling the temperature as recited in claim 1.

Yamagishi relates to the forming process of a polyamide sheet (film), while the present invention does not relate to the film itself. Yamagishi may be applicable for the method of producing the heat resistant film which is a starting material of the present invention as recited in claim 1. Yamagishi also does not disclose thermal lamination, because the method of producing the sheet disclosed in Yamagishi relates to the melt extrusion. Production of the starting material, without thermally laminating with the copper foil, does not require controlling the temperature as recited in claim 1.

Neither Minami, Akashi nor Yamagishi disclose thermal lamination. The three references merely disclose the method of producing the laminating material. Since these three references merely focus on the cooling process in producing the laminating material of the present invention, it would not have been obvious to combine any of these references with Hase.

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Double Patenting Rejection

Claims 1, 2, 5, 6 and 8 were rejected on the ground of the nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of **Hase** (U.S. Patent No. 7,101,455) in view of **Minami**, **Akashi** or **Yamagishi** and as evidenced by the American Heritage Dictionary definition of “room temperature”; and claims 3, 4 and 7 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of **Hase** (U.S. Patent No. 7,101,455) in view of **Minami**, **Akashi** or **Yamagishi** and as evidenced by the American Heritage Dictionary definition of “room temperature,” and further in view of **Tokabayashi** (JP 04033848).

Favorable reconsideration is requested.

The Office Action acknowledges that claims 1-4 of Hase (U.S. 7,101,455) do not encompass the teaching of controlling the temperature in a width direction of the laminate in a cooling process such that the temperature of the ends of the laminate is the same as or higher than that of the center portion. (Office Action, page 8.)

Applicants respectfully traverse this rejection for the same reasons stated above regarding the § 103 rejection based on Hase in view of Minami, Akashi or Yamagishi.

Conclusion

For at least the foregoing reasons, claim 1 is patentable over the cited references, and claims 2-8 are patentable by virtue of their dependence from claim 1. Accordingly, withdrawal of the rejections of claims 1-8 is hereby solicited.

In view of the above remarks, Applicants submit that the claims are in condition for allowance. Applicants request such action at an early date.

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If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

A handwritten signature in black ink, appearing to read 'A Melick', is positioned above the printed name.

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